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THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

RECENT PROGRESS IN SPECTROSCOPIC METHODS[1]

AN observer who for the first time views the light of the sun through a prism can not fail to express his wonder and delight at the gorgeous display of colors into which the white light is separated—and if the observation is made under the same conditions as in the celebrated experiment of Newton, 1666, there is in truth nothing else which he could observe. You will remember that he allowed a beam of sunlight to stream through a round opening in a shutter of his window, falling on a glass prism, which bent the sun rays through different amounts depending on their color, thus spreading out the white round sunlit spot on the opposite wall into a colored band—the spectrum—which he rather arbitrarily divided into seven colors—red, orange, yellow, green, blue, indigo and violet. (If the division were made to-day I doubt if indigo would be included.) There is in fact no definite demarcation between these, and they shade insensibly into each other—and if the solar spectrum were always produced under these conditions we should say it was continuous, indeed if it were not the sun but an argand burner or an incandescent lamp which served as source, it would really be so.

But even if the source consisted of isolated (but sufficiently numerous) separate colors, the fact would be disguised by the overlapping of the successive images. In other words the spectrum is not pure. In

[1] Address of the president, Washington meeting, December, 1911.